

# SENATE BILL REPORT

## E2SHB 1872

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As of March 28, 2013

**Title:** An act relating to establishing a comprehensive initiative to increase learning opportunities and improve educational outcomes in science, technology, engineering, and mathematics through multiple strategies and statewide partnerships.

**Brief Description:** Establishing a comprehensive initiative to increase learning opportunities and improve educational outcomes in science, technology, engineering, and mathematics through multiple strategies and statewide partnerships.

**Sponsors:** House Committee on Appropriations (originally sponsored by Representatives Maxwell, Dahlquist, Lytton, Sullivan, McCoy, Upthegrove, Bergquist, Seaquist, Morrell, Wylie, Goodman, Ryu, Tarleton, Tharinger, Springer, Stonier, Jinkins, Orwall, Pollet, Fey, Hansen, Lias and Freeman; by request of Governor Inslee).

**Brief History:** Passed House: 3/08/13, 58-40.

**Committee Activity:** Early Learning & K-12 Education: 3/20/13, 3/27/13 [DPA-WM].  
Ways & Means:

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### SENATE COMMITTEE ON EARLY LEARNING & K-12 EDUCATION

**Majority Report:** Do pass as amended and be referred to Committee on Ways & Means.

Signed by Senators Litzow, Chair; Dammeier, Vice Chair; McAuliffe, Ranking Member; Rolfes, Assistant Ranking Member; Billig, Brown, Cleveland, Fain, Hill, Mullet and Rivers.

**Staff:** Eric Wolf (786-7405)

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### SENATE COMMITTEE ON WAYS & MEANS

**Staff:** Elise Greef (786-7708)

**Background:** In 2010, the Legislature directed the Office of Superintendent of Public Instruction (OSPI) to convene a workgroup to develop a comprehensive plan to establish educational pathways from elementary education through postsecondary education and careers in science, technology, engineering, and mathematics (STEM). The plan defined STEM Literacy and made a number of recommendations regarding recruiting and retaining STEM educators; creating STEM pathways to boost student success; and using STEM education to close the opportunity gap and prepare students for career and college.

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*This analysis was prepared by non-partisan legislative staff for the use of legislative members in their deliberations. This analysis is not a part of the legislation nor does it constitute a statement of legislative intent.*

Examples of other STEM K-12 education initiatives currently supported by the state include designation of a statewide STEM director within OSPI; a provision of funds to support career and technical education in STEM and professional development for teachers to implement STEM curricula; designation of STEM lighthouse schools to serve as examples of innovation and best practices; support for a mathematics, engineering, and science achievement (MESA) program run through state colleges and universities to encourage students in under-represented groups to gain skills and explore careers in STEM; and grants for high schools to implement advanced STEM curricula, such as Project Lead-the-Way.

Washington STEM is a nonprofit organization established in 2011 with the objective of identifying and supporting innovations in STEM education across the state. Since its inception, Washington STEM has invested in a variety of initiatives including support for regional networks of education institutions and community organizations to advance STEM education that is aligned with local economic development; entrepreneur awards to help educators test new ideas and innovations; and portfolio awards that support multi-year STEM education projects.

One of the responsibilities of the Washington Student Achievement Council (WSAC) is to propose educational attainment goals and priorities through a ten-year Roadmap. Strategies included in the Roadmap are outlined in statute. The first Roadmap is due December 1, 2013.

The Quality Education Council (QEC) is charged with recommending and informing the ongoing implementation of the program of basic education to be delivered by public schools. QEC also must identify measurable ten-year goals and priorities for the education system.

***Summary of Bill (Recommended Amendments):*** STEM Literacy. A definition of STEM literacy is adopted as the ability to identify, apply, and integrate concepts from science, technology, engineering, and mathematics to understand complex problems and to innovate to solve them. Four components of STEM literacy are also described as scientific, technological, engineering, and mathematical literacy.

STEM Education Innovation Alliance. A STEM Education Innovation Alliance (Alliance) is established to advise the Governor and provide vision and guidance in support of STEM education initiatives from early learning through postsecondary education. The Governor's Office, in consultation with the Superintendent of Public Instruction, must invite representatives of businesses, education institutions, and organizations with expertise in STEM education to participate. The Governor's Office, OSPI, and other state education agencies are also represented.

The first task of the Alliance is to combine previous STEM education strategic plans into a comprehensive STEM Framework for Action and Accountability (Framework). The Framework must use selected measures that are meaningful indicators of progress in increasing STEM learning opportunities and achieving longer-term outcomes in STEM.

STEM Benchmark Report Card (Report Card). The Alliance must also develop Report Card based on the Framework. The purpose of the Report Card is to monitor progress in aligning

strategic plans and activities in order to prepare students for STEM-related jobs and careers, with the longer-term goal of improving educational, workforce, and economic outcomes. The Report Card must be posted online and contain the following: the most recent data for the measures and indicators of the Framework; information from state education agencies on how activities and resources are aligned with the Framework; and data regarding STEM job openings.

The Education Data Center in the Office of Financial Management (OFM) coordinates data collection and analysis to support the Report Card. State education agencies must annually report on how their policies, activities, and expenditures align with and support the Framework. The Employment Security Department must create an annual report on current and projected job openings in STEM fields for the Report Card.

The first Report Card must be published by January 10, 2014, and updated annually thereafter.

Statewide STEM Organization. To the extent funds are appropriated for this purpose, OFM must contract with a statewide nonprofit organization with expertise in promoting and supporting STEM education from early learning through postsecondary education. The purpose of the contract is to identify, test, and develop evidence-based approaches for increasing STEM learning opportunities and improving outcomes that are aligned with the Framework.

The activities conducted under the contract are negotiated between the Governor's Office, OFM, and the selected organization, and include a communications campaign about the importance of STEM literacy and the opportunities presented by STEM education and careers; expansion of regional STEM networks; competitive grants to support innovative practices in STEM education, including models of interdisciplinary instruction and project-based learning; professional development opportunities, including technology-enabled learning systems to support state learning standards; and opportunities to extend STEM into early learning.

Other Initiatives. Subject to funding, OSPI, in consultation with the Alliance, must identify and disseminate resources and materials to elementary, middle, and high schools to encourage interdisciplinary instruction and project-based learning in STEM fields.

WSAC must consult with the Alliance in order to align the Roadmap with the Framework and must include strategies in the Roadmap to strengthen the education pipeline and degree production in STEM fields. QEC must include strategies to increase STEM learning opportunities in the goals and priorities for the education system.

The provisions of the bill, as well as laws pertaining to STEM lighthouse schools, the STEM director in OSPI, the MESA program, and grants for STEM curricula, are all placed in a new RCW Chapter.

**EFFECT OF CHANGES MADE BY EARLY LEARNING & K-12 EDUCATION COMMITTEE (Recommended Amendments):** The Governor's Office must invite one

elementary school STEM educator, one middle school STEM educator, and one high school STEM educator to participate in the Alliance.

**Appropriation:** None.

**Fiscal Note:** Available.

**Committee/Commission/Task Force Created:** No.

**Effective Date:** Ninety days after adjournment of session in which bill is passed.

**Staff Summary of Public Testimony on Engrossed Second Substitute House Bill (Early Learning & K-12 Education):** PRO: The STEM program at Sammamish High School is a great success. STEM education is hands on and engaging, involving students in project-based learning. OSPI supports the bill and is looking forward to working with the Governor's Office to create a framework for action and accountability. Washington is the number one state for STEM job creation, and this bill will help ensure we have a future workforce ready for such jobs.

**Persons Testifying (Early Learning & K-12 Education):** PRO: Andrea Cobb, OSPI; Caroline King, WA STEM; Peter Orth, citizen.